

WHAT IS CLAIMED IS:

1. An adhesive for sealing a wound, the adhesive comprising a cyanoacrylate, a substance, and a defect forming agent, wherein the defect forming agent is capable of being removed from a cured cyanoacrylate matrix by solvation in an aqueous solution whereby a plurality of defects in the matrix are formed permitting release of the substance from the matrix at a controlled rate.

2. The adhesive of claim 1, wherein the cyanoacrylate comprises butyl acrylate.

3. The adhesive of claim 1, wherein the cyanoacrylate comprises octyl acrylate.

4. The adhesive of claim 1, wherein the defect forming agent comprises a hydrophilic polymer.

5. The adhesive of claim 4, wherein the hydrophilic polymer comprises polyethylene glycol.

6. The adhesive of claim 5, wherein the polyethylene glycol has an average molecular weight of about 600.

7. The adhesive of claim 1, wherein the substance comprises a therapeutic agent.

8. The adhesive of claim 7, wherein the therapeutic agent is selected from the group consisting of anti-inflammatory agents, anti-infective agents, immunosuppressive agents, and anesthetic agents.

9. The adhesive of claim 7, wherein the therapeutic agent comprises an antibiotic.

10. The adhesive of claim 1, further comprising a water-soluble acidic antidegradation agent.

11. The adhesive of claim 10, wherein the water-soluble acidic antidegradation agent comprises Vitamin C.

12. A method of sealing a wound, the method comprising the steps of:
approximating the wound;

applying an adhesive comprising a cyanoacrylate, a substance, and a water soluble defect forming agent to a tissue surface surrounding the wound; and

curing the adhesive, whereby the wound is sealed.

5 13. The method of claim 12, further comprising the steps of:

removing the defect forming agent from the cured adhesive by solvating the defect forming agent in a body fluid; and

delivering the substance to the tissue surface beneath the cured adhesive via defects formed by removal of the defect forming agent.

10 14. The method of claim 12, wherein the cyanoacrylate comprises butyl acrylate.

15. The method of claim 12, wherein the cyanoacrylate comprises octyl acrylate.

15 16. The method of claim 12, wherein the defect forming agent comprises a hydrophilic polymer.

17. The method of claim 16, wherein the hydrophilic polymer comprises polyethylene glycol.

18. The method of claim 17, wherein the polyethylene glycol has an average molecular weight of about 600.

20 19. The method of claim 12, wherein the substance comprises a therapeutic agent.

20. The method of claim 19, wherein the therapeutic agent is selected from the group consisting of anti-inflammatory agents, anti-infective agents, immunosuppressive agents, and anesthetic agents.

25 21. The method of claim 19, wherein the therapeutic agent comprises an antibiotic.

22. The method of claim 12, wherein the wound comprises a skin laceration.

23. The method of claim 12, wherein the adhesive further comprises a water-soluble acidic antidegradation agent.

30 24. The method of claim 23, wherein the water-soluble acidic antidegradation agent comprises Vitamin C.